

Limestone Briquette Production and Characterization

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Abstract : Modern agriculture requires productivity, efficiency and quality. Therefore, there is need for agricultural limestone implementation that provides adequate amounts of calcium and magnesium carbonates in order to correct soil acidity. During the limestone process, fine particles (with average size under 400 μ m) are generated. These particles do not have economic value in agricultural and metallurgical sectors due their size. When limestone is used for agriculture purposes, these fine particles can be easily transported by wind generated air pollution. Therefore, briquetting, a mineral processing technique, was used to mitigate this problem resulting in an agglomerated product suitable for agriculture use. Briquetting uses compressive pressure to agglomerate fine particles. It can be aided by agglutination agents, allowing adjustments in shape, size and mechanical parameters of the mass. Briquettes can generate extra profits for mineral industry, presenting as a distinct product for agriculture, and can reduce the environmental liabilities of the fine particles storage or disposition. The produced limestone briquettes were subjected to shatter and water action resistance tests. The results show that after six minutes completely submerged in water, the briquettes where fully diluted, a highly favorable result considering its use for soil acidity correction.

Keywords : agglomeration, briquetting, limestone, soil acidity correction

Conference Title : ICGES 2016 : International Conference on Geology and Earth Sciences

Conference Location : Prague, Czechia

Conference Dates : October 06-07, 2016